

Dangerous Currents

Outreach Efforts in Michigan

Risk Communication, New Messages and Public Resources

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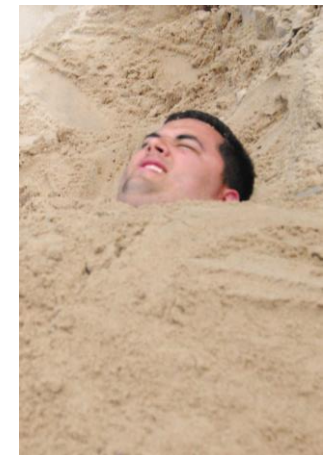


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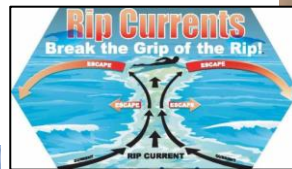


Problems:

Distracted, Peer Pressure, Unrealistic...



A Variety of Water Safety Messages *And a Lack of Consistency*



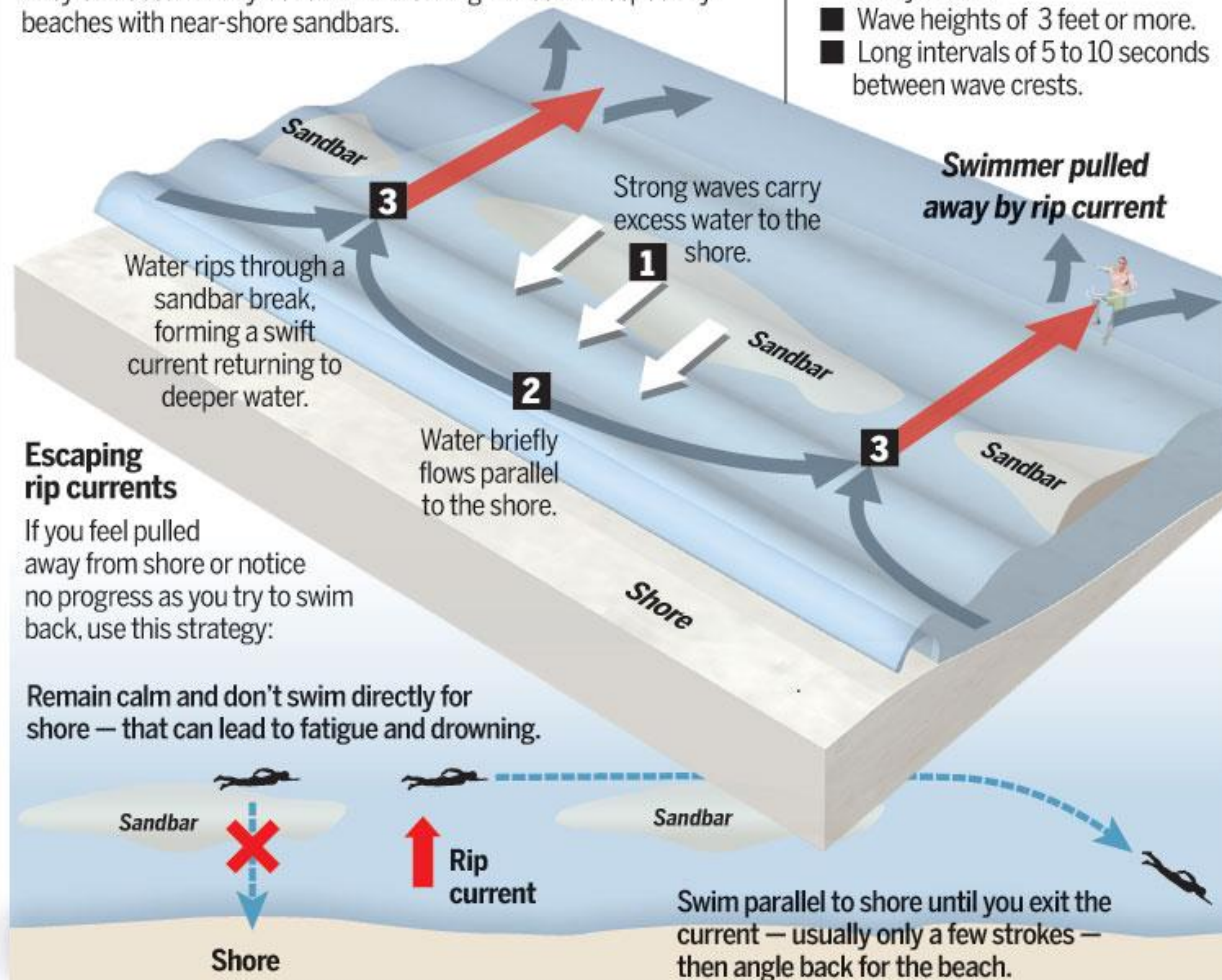
Surviving rip currents

Rip currents are powerful, channeled currents of water that flow away from the shore, often dragging swimmers into deeper water. They can occur at any beach with breaking waves and especially beaches with near-shore sandbars.

Identify rip current conditions

Four factors that produce rip currents:

- High wind speeds.
- Winds blowing directly toward a sandy beach.
- Wave heights of 3 feet or more.
- Long intervals of 5 to 10 seconds between wave crests.



Need: Focus on MI & GL

Comprehensive, multi-phased effort to help **reduce the loss of life** along Michigan's coastal beach areas

- **Communicate:** MI (E. Coast Lk. MI) is epicenter of incidents
- **Improve:** *Designated Beach Policy* — Provide outreach expertise & recommendations
- **Translate:** Develop *usable* science-based information for target audiences (Meadows & Lapinski teams)

Train DNR Staff

DNR: First responders at most public beaches

- Also, MI Sheriff's Assn. and U.S. Coast Guard
- Stakeholders participated in a series of workshops hosted at DNR park locations over a 2-year period
- Additional workshops were held with other stakeholders, in collaboration with partners in other states



Data Guided Actions & Outputs

- **Incident Data - NWS (Fatalities and Rescues):**
Used to determine target groups
 - *Demographics:* 16-24 year old Young Men and Parents
- **Determined need for social scientist to assess risky behavior** (e.g., jumping off piers, swimming in high wave conditions)
 - Also tested draft messages and graphics (diagrams) to be used for new public information materials.

Risk Communication *Considerations*

Actions:

- What to do in an emergency
- How to avoid an emergency
- How to help others

Communicate Messages:

- *Before getting to the beach*
 - Forecasts (apps)
 - Publications
 - Social media
- *At the beach*
 - Flags
 - Handouts
- *Near a specific hazard*
 - Signs

Social Science

Lapinski & Viken

MSU research team studied 18-24 y.o. males – findings:

- Alcohol use significant factor in risk-taking
- Intentional risk-taking (often related to alcohol use)
- Most go to the beach with a group
- Many decide to swim before they get to the beach, despite conditions
- Piers were recognized as areas where risk behaviors occur and accidents happen
- Perception that self-rescue skills were good, able to rescue self & friends

Participants recognized color flag system as informative, even if decision was to enter the water

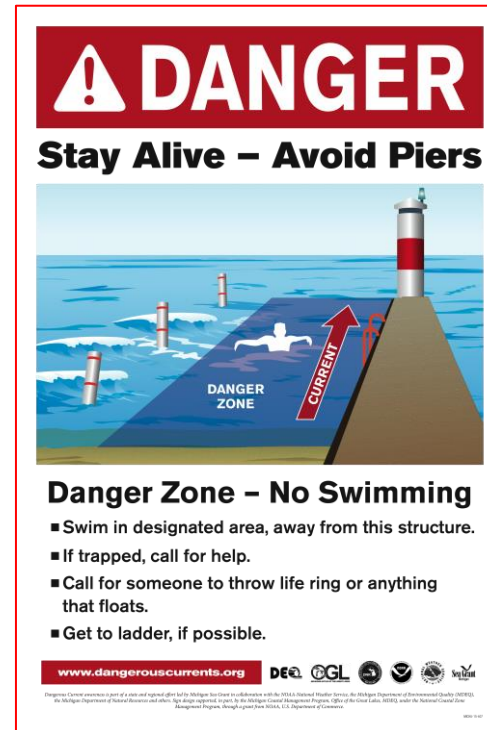
Response

- *Targeted:* Youth, adults (based on NWS data)
- *Multi-faceted:* Considering what to do (1) In an emergency, (2) While at the beach, and (3) Before going to the beach
- *Multi-dimensional Deliverables:* Short publications, signs, website, media outreach, training materials, lessons, and recommendations

Application: *Words and Pictures*

Clear and concise text:

- Used for multiple applications (signs, publications, websites, park notices, etc.)
- Clear diagram supporting and enhancing the text



Comparison: *Old and New Signs*

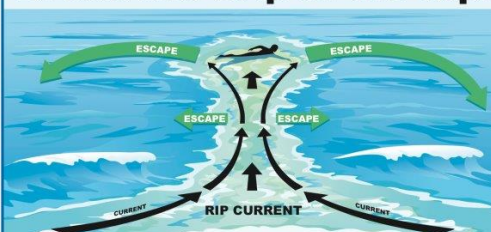
Key Differences

Left: Rip Only

Right: New, multiple hazards (based on Lapinski recommendations)

RIP CURRENTS

Break the Grip of the Rip!



Rip currents are powerful currents of water moving away from shore. They can sweep even the strongest swimmer out to sea.
www.ripcurrents.noaa.gov


IF CAUGHT IN A RIP CURRENT

- ◆ Don't fight the current
- ◆ Swim out of the current, then to shore
- ◆ If you can't escape, float or tread water
- ◆ If you need help, call or wave for assistance

SAFETY

- ◆ Know how to swim
- ◆ Never Swim alone
- ◆ If in doubt, don't go out


More information about rip currents can be found at the following web sites:
www.ripcurrents.noaa.gov
www.usfa.org



Dangerous Currents

Avoid Dangerous Areas:


- Stay in designated swim areas.
- Avoid swimming near piers and breakwalls. Many fatalities have occurred.



If trapped in a dangerous current:




- Swim to the side, out of the current, and then to shore.
- If in danger, call for someone to throw a life ring or anything that floats.

www.dangerouscurrents.org



Dangerous Current awareness is part of a state and regional effort led by Michigan Sea Grant in collaboration with the NOAA National Weather Service, the Michigan Department of Environmental Quality (MDEQ), the Michigan Department of Natural Resources and others. Sign design supported in part by the Michigan Coastal Management Program, Office of the Great Lakes, MDEQ, under the National Coastal Zone Management Program, through a grant from NOAA, U.S. Department of Commerce.

DangerousCurrents.org




[Home](#) | [Currents 101](#) | [Types of Currents](#) | [Be Safe at the Beach](#) | [Incident Database](#) | [Research](#) | [Resources](#)

Home

Dangerous currents and breaking waves are common in the Great Lakes region. Rip currents and other currents found near piers are extremely dangerous for swimmers. This website provides information for swimmers, educators, first responders and the media.

You will find tips for swimmers about how to be safe at the beach, classroom lessons and information about the science behind currents and waves. Check the searchable data from the National Weather Service, and learn more about the types of currents by reviewing descriptions. Under resources, look for publication templates, and beach sign templates, as well as diagrams.

A regional network of universities, as well as representatives from local, state and federal agencies, is promoting water safety throughout the Great Lakes region. Partners include Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin Sea Grant programs, Great Lakes state Coastal Management Programs, the NOAA National Weather Service, the U.S. Coast Guard, as well as park officials, sheriffs, fire and rescue and beach safety groups.



WATER WATCHER

I pledge to carefully watch the people in my group. I will designate another Water Watcher if I have to leave the area.

If someone is in trouble, I will:

- Throw anything that floats to them, like a life ring or cooler.
- Seek help from park staff or others.
- Wear a life jacket, if I must go in the water.




I will ask others to stay away from piers and breakwalls.

WATER WATCHER & WATER SAFETY TIP CARDS

AVAILABLE IN BULK QUANTITIES


Order Now

PAY ATTENTION TO WARNING FLAGS

-  **Green** - Go. But stay aware of changing conditions.
-  **Yellow** - Caution. Watch for rip currents.
-  **Red** - Stop. Stay on the beach and out of the water.

Have fun and be safe: The most effective defense against drowning is closely watching the people in your party.


www.dangerouscurrents.org



Programs receive a monetary grant from the National Weather Service, the Michigan Department of Environmental Quality (MDEQ), the Michigan Department of Natural Resources and others. The NOAA Coastal Program supports the development of state educational programs and public outreach projects. 8/2013 10-28

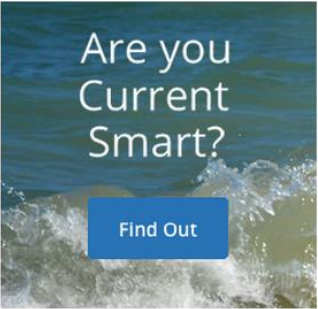
check your local

BEACH FORECAST



Are you Current Smart?

Find Out



Key Features:

- Diagrams & descriptions
- Classroom lessons
- Targeted messages: Parents
- Research summary
- Resources (publication and sign templates)

[Types of Currents](#) | [Be Safe at the Beach](#) | [Incident Database](#) | [Research](#) | [Resources](#)

Types of Currents

The three most common dangerous currents in the Great Lakes include rip, structural and longshore currents. Several other dangerous currents, as well as wave height and period (time between waves) are also factors for swimmers. This webpage provides diagrams and information about dangerous currents and breaking waves, developed by Michigan Sea Grant in collaboration with the National Weather Service.


Michigan Sea Grant developed high-resolution graphic templates for each of the diagrams below.

- [Resources](#)

The National Weather Service collects data about the different types of currents involved in fatalities and rescues.

- [Great Lakes Current Incident Database](#)

RIP CURRENTS



The diagram illustrates a rip current forming between a sandbar and the shore. Red arrows show water flowing from the beach out to sea through a narrow channel. Black arrows labeled 'ESCAPE' point away from the current. A swimmer is shown being pulled out. The diagram is credited to Michigan Sea Grant and the National Weather Service.

Rip Current

Rip currents form when waves break over a sandbar near the shoreline and the water and its momentum get trapped between sandbar and shore. When the water and the momentum build up, the water has to go somewhere. One of the ways the pressure is relieved is when water returns to the lake in the form of a rip current, a narrow but powerful stream of water and sand moving (ripping) swiftly away from shore. Rip currents that vary in size and speed can be found on many beaches every day.

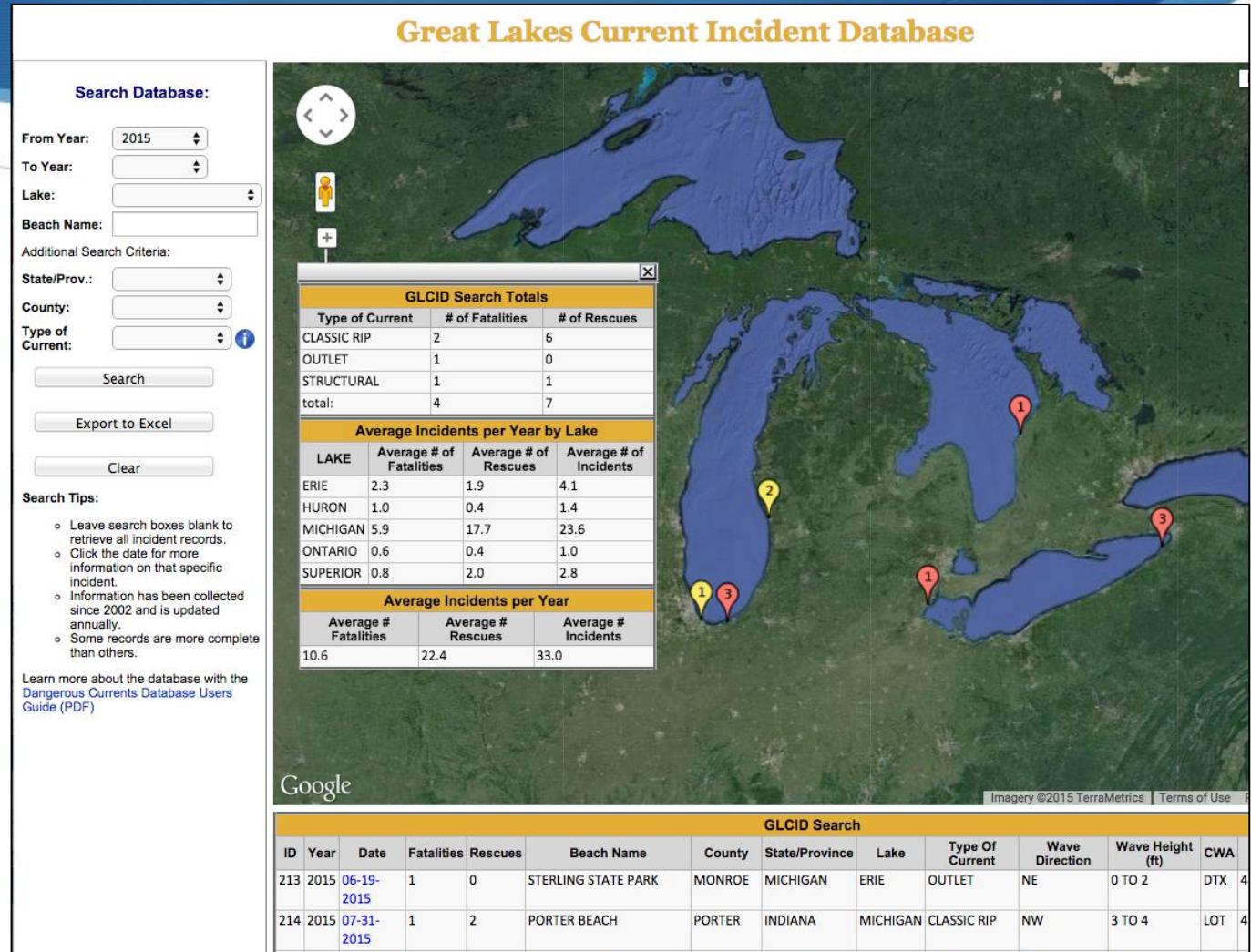
- Rip currents will not pull a swimmer *under* the water, but will carry them *out to the open water*, away from shore.

NWS Data

Fatalities & Rescues

Search Functions:

- Year
- Lake
- Beach
- State
- Type of Current



Publications



WATER WATCHER

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If someone is in trouble, I will:

- Throw anything that floats to them, like a life ring or cooler.
- Seek help from park staff or others.
- Wear a life jacket, if I must go in the water.

I will ask others to stay away from piers and breakwalls.



WATER SAFETY TIPS

PAY ATTENTION TO WARNING FLAGS

	Green = Go. But stay away of changing conditions.
	Yellow = Caution. Watch for rip currents.
	Red = Stop. Stay on the beach and out of the water.

- A red flag means that swimmers are in danger of drowning due to rip currents and other hazards.
- Stay 150 feet away from piers and breakwalls. Dangerous currents are often present near structures, regardless of weather conditions.

DANGEROUS CURRENTS

Several types of dangerous currents, including rip currents, pull people away from shore and can quickly take even an Olympic swimmer.

If caught in a dangerous current:

- **Swim at an angle:** Swim toward shore at an angle, out of the current. If tired, switch between swimming and floating until you reach shore.
- **Stay calm:** Fear, panic and exhaustion can be a deadly combination. Focus on breathing and keeping your head above water.
- **If in danger:** Face the shore and call for help.

YOUNG MEN MOST AT RISK

- According to the National Weather Service, young men are a high risk group.
- Since 2001, nearly 70 people have died near structures. Experts advise staying away from piers and breakwalls at all times.

New Equipment, Messages, Tools & Improved Policy

New Messages Applied:

- Publications, Beach Signs, Websites, AND: Regional CSP Project

New Training Materials:

- DNR PPT – Annual Training
- Online Training (to come)

Piloted Equipment:

- 10 DNR-run beaches
- DNR concerned about liability issues

Recommendations:

- Designated Beach Policy

Partners

- Univ. of Michigan & Michigan State Univ.
- Michigan Technological Univ.
- NOAA: NWS & Coastal Storms
- Department of Natural Resources
- National Parks
- And many more

Thank you

Matt, Ronda - CZM

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Guy - MTU

First responders, community
leaders, volunteers and others

